

15. (Original) The prosthesis of claim 14 where the means for resiliently holding said appliance to said implant abutment comprises an O-ring positioned in said concave groove.

16. (Original) The prosthesis of claim 15 where the appliance has a groove in an inner surface thereof adapted to receive said O-ring.

### **REMARKS**

#### **Status of the Claims:**

Claims 1-8 and 10-16 are currently pending in this application. The independent claims are claims 1, 7 and 14. Claims 1-5, 7, 8 and 10-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber (2,866,285) and Kwan (5,733,124). Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber in view of Kwan and further in view of Beaty et al. (5,476,383). By this amendment, Applicant has cancelled claim 2 and amended independent claims 1, 7 and 14. Applicant respectfully submits that as amended, the within application is in condition for allowance.

#### **Rejections under 35 U.S.C. § 103:**

Claims 1-5, 7, 8 and 10-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber in view of Kwan. Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber in view Kwan, and further in view of Beaty et al. A prima facie case establishing obviousness requires that (1) there must be some suggestion or instructions to modify the references or to combine the teachings; (2) a reasonable expectation of success; and (3) the prior art references must teach or suggest all the claim limitations. See MPEP § 2143. In this instance, the references in combination do not teach or suggest all the claim limitations of the present invention as

recited in the amended claims. Further, there is no suggestion or instruction to modify the references or to combine the teachings.

Gerber discloses a device for releasably mounting an artificial tooth. This device includes a rigid post having a base end adapted to be fixed permanently to a root cap so that the post extends from the cap and has a free end distant therefrom. See Gerber, col. 1, ll. 37-43. Gerber teaches that an artificial tooth receives in its interior a hollow cap means, which also includes an outer hollow member into which an inner hollow member is threaded. See id., col. 2, ll. 1-10. This member having at its bottom end “an outwardly extending annular flange having a convex surface 6a which bears flush against a bottom concave annular surface 4a of the outer hollow member of the cap means 4 . . .” Id. As disclosed by Fig. 1, this outwardly extending annular flange is further secured into a tooth’s natural root 1 by a root pin 2 and is dependent on the gum tissue for support. See id., Fig. 1.

In contrast as amended, the invention of claims 1, 7 and 14 teaches away from the use of an outwardly extending annular flange to secure the implant abutment. The amended claims disclose an implant abutment, where *said implant abutment includes an extended tapered surface for directly supporting an appliance and for guiding engagement with said retainer cavity of said appliance.* See Specification, p. 1. Thus, the appliance is fully supported by the tapered surface of the abutment and need not depend upon gum tissue for support. This is a salient feature of the invention and represents an improvement over the conventional method taught by the Gerber patent. This design of having the implant abutment directly support the artificial tooth enables the appliance to look more like a natural tooth or teeth, and to nestle closely to the gum

line to fully conceal the area of abutment affixation and the abutment to provide a natural look. See id.

The present invention teaches a simplified non-obvious removable dental implant appliance mounting. For example, the inwardly tapered surface of the platform of the male coupling means of the invention directly supports the appliance by frictional engagement with the interior surface of the downwardly extending tapered skirt portion of the dental appliance above and below the retention device, such as an O-ring 41 removably secured to the over denture or female half of the coupling. The invention is therefore capable of being mass-produced at a reduced cost since fewer raw materials are needed for its manufacture.

The invention taught by the Kwan patent is patently distinct from the invention of the amended claims. Kwan teaches a dental implant assembly containing an integral dental implant, which has an abutment joined to an implant fixture. The abutment contains a top section, a bottom section integrally joined to the top section, and an orifice extending through a portion of the top section. The top section has a cross-sectional shape substantially like a polygon that is formed by alternating linear and arcuate walls. The abutment also has a horizontally-extended ledge disposed beneath the top section of said abutment, and a base which extends upwardly and outwardly from its bottom to its top. Kwan does not disclose an *implant abutment which includes an extended tapered surface for directly supporting an appliance and for guiding engagement with said retainer cavity of said appliance.*

Likewise, Beaty et al. does not disclose the invention of amended claims 1, 7 and 14. Beaty et al. discloses a second stage healing abutment for forming and preserving in

the mucosa above a dental implant a transmucosal opening large enough to receive an artificial tooth that faithfully replicates a natural tooth being restored, and a companion transfer coping having identical transmucosal portions for forming in a laboratory model a faithful replica of the transmucosal opening made of a resilient gingiva replicating material in which to fabricate the artificial tooth, and methods of using the same. Beaty et al. teaches a bolt passing through an axial bore in the healing abutment which is used to attach the abutment to the implant in a well known manner. Beaty et al. neither teaches nor suggests an appliance having a hollow retainer cavity with an outwardly and downwardly taper relative to said implant abutment axis forming a retainer surface telescopically mateable onto said implant abutment surface as disclosed by independent claims 1, 7 and 14. Similarly, Beaty et al. neither teaches nor suggests an implant abutment which *includes an extended tapered surface for directly supporting an appliance and for guiding engagement with said retainer cavity of said appliance.*

In combination the references of Gerber, Kwan and Beaty et al. do not disclose all the claim limitations recited in independent claims 1, 7 and 14. Neither Gerber, nor Kwan, nor Beaty et al. disclose an implant abutment, which is capable of directly supporting an appliance that is not dependent on the conventional method of using the gum line or tissue for support. Necessarily, claims 1, 7 and 14 are patentable over the cited references.

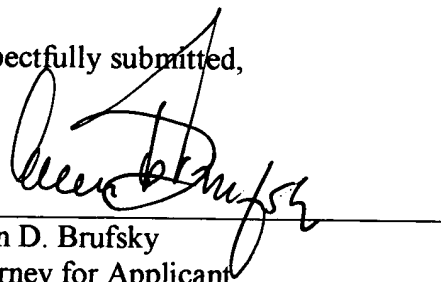
Moreover, the device taught by Gerber is markedly distinct from the devices taught by both Kwan and Beaty et al. Thus, there would be there is no suggestion or motivation to modify the references or to combine the teachings of Gerber with Kwan or Beaty et al. Gerber references a device for releasably mounting an artificial tooth or the

like having a base end adapted to be fixed permanently to the root cap so that the post extends from the cap and has a free end therefrom. See Gerber, col. 1, ll. 31-43. A snap ring is located in the annular groove in the recess of the cap means for releasably maintaining the cap means on the post. See id., col. 1, ll. 48-51. "The post is disclosed as made of two parts 9 and 10, the part 10 having a bottom threaded portion threaded into the recess of the part 9 . . . At its base, the post is provided with an outwardly extending annular flange 9a." Id.

In contrast, Kwan teaches a dental implant assembly of a hollow core using a series of bores and retaining screws to secure the implant abutment. This is patentable distinct from Gerber which uses an outwardly extending annular flange to secure the implant abutment. Likewise there would be no motivation, hint or suggestion to combine Gerber and Kwan with Beaty et al. which teaches a bolt passing through an axial bore in the healing abutment which is used to attach the abutment to the implant in a "well known manner."

Accordingly, claims 3-6, which depend from independent claim 1, claims 8, 10-13 which depend from independent claim 7, and claims 15-16 which depend from independent claim 14 are therefore patentable over the cited art.

Respectfully submitted,



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